

WHAT IS CLAIMED IS:

1. A communication system wherein a device and a client communicate data with each other through a network,

wherein said device comprises:

5 a first storage device which stores a root certificate including a public key in a pair of the public key and a private key and signed with the public key;

10 a certificate creator which creates a second certificate including the root certificate designated as a certificate authority at a higher level and signed with the private key; and

a communication device which transmits the second certificate created by said certificate creator;

wherein said client comprises:

15 a second storage device which stores the root certificate stored in said first storage device; and

a verifier which verifies the signature of the second certificate received from said device with the root certificate in said second storage device.

20 2. The communication system according to claim 1, wherein said device is a printer.

3. The communication system according to claim 1, wherein said device is a multifunctional peripheral.

4. The communication system according to claim 1, wherein 25 said client is a personal computer.

5. The communication system according to claim 1, wherein
said second storage device is a hard disk drive.

6. The communication system according to claim 1, wherein
said second storage device is a read-only memory.

5 7. A communication method for a communication system,
wherein a device and a client communicate data with each
other through a network,

wherein the device holds a root certificate including
a public key in a pair of the public key and a private key
10 and signed with the public key;

the client installs the root certificate received from
the client and including the private key;

the device creates a second certificate including the
root certificate designated as a certificate authority at a
15 higher level and signed with the private key when data is
sent to the client;

the device sends the second certificate to the client;
and

20 the client verifies the signature of the second
certificate received from the device with the root
certificate.

8. The method according to claim 7, wherein the device
further holds an intermediate certificate or intermediate
certificates for a certificate authority or certificate
authorities existing in a hierarchical order up to a root
25

certificate authority;

the client installs the intermediate certificate or intermediate certificates besides the root certificate;

the device sends the second and intermediate
5 certificates to the client; and

the client verifies the signatures of the second and intermediate certificates received from the device with the intermediate and root certificates.

9. The method according to claim 7, wherein when the
10 client installs the root certificate, the client firstly requests the root certificate to the device when a printer driver is installed from the device, secondly receives the root certificate from the device, thirdly converts the received root certificate to a predetermined format when the root certificate is received, and fourthly installs the
15 converted root certificate.

10. The method according to claim 7, wherein when the client installs the root certificate, the installation is performed after it is confirmed by a user.

20 11. The method according to claim 7, wherein the device has a print function, and the client installs the root certificate after a printer driver is installed from the device.

25 12. The method according to claim 7, wherein the data is communicated according to security sockets layer protocol.

13. A computer-readable storage device storing a program comprising the steps of:

requesting a root certificate to a device connected through a network;

5 receiving the root certificate from the device; and installing the root certificate.

14. The computer-readable storage device according to claim 13, wherein the installing step comprising the steps of:

10 converting the received root certificate to a predetermined format after the root certificate is received; and

installing the converted root certificate.

15. The computer-readable storage device according to claim 13, wherein the program further comprising the step 15 of installing a printer driver before the requesting step.

16. The computer-readable storage device according to claim 13, wherein the program further comprising the step of receiving user's confirmation on the installation of the root certificate before the requesting step.

20 16. A device to be used in a communication system between the device and a client through a network wherein the device sends information to the client and the client uses the information to communicate with the device, comprising:

25 a first storage device which stores a pair of a public key and a private key;

a second storage device which stores a root certificate signed with the public key; and

an interface which sends the information as well as the public key to the client through the network;

5 wherein the root certificate is sent through said interface to the client for verification of the information by the client.

17. The device according to claim 16, wherein the device is a device which functions as a printer.

10 18. The device according to claim 16, wherein the information is a printer driver.